

FORM PTO-1449

U.S. DEPARTMENT OF COMMERCE  
PATENT AND TRADEMARK OFFICEATTY. DOCKET NO.  
NIH142.001C1APPLICATION NO.  
09/610,034INFORMATION DISCLOSURE STATEMENT  
BY APPLICANT

(USE SEPARATE SHEETS IF NECESSARY)

APPLICANT  
Gu, et al.FILING DATE  
July 5, 2000GROUP  
1645Examiner  
Int.

NOV 16 2000

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUBCLASS	FILING DATE (IF APPROPRIATE)
KSS	1	5,556,755	09/17/96	Murphy	435	6	9/29/1993
KSS	2	5,607,846	03/04/97	Murphy, et al.	435	69.3	3/4/1997
KSS	3	5,334,379	08/02/94	Pillai, et al.	424	85.2	8/2/1994

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUBCLASS	TRANSLATION	
							YES	NO
KSS	4	98/53851	12/03/98	WO/98/01001 WIPO	A61K	39/02	✓	

EXAMINER  
INITIAL

## OTHER DOCUMENTS (INCLUDING AUTHOR, TITLE, DATE, PERTINENT PAGES, ETC.)

KSS	5	Ahmed, K., et al. (1991) Possible presence of a capsule in <i>Branhamella catarrhalis</i> . Microbiol. Immunol. 35: 361-366
<del>KSS</del>	<del>6</del>	<del>Alaeus, A., et al. (1991) <i>Branhamella catarrhalis</i> septicemia in an immunocompetent adult. Scand. J. Infect. Dis. 23: 115-116</del>
KSS	7	Barenkamp, S.J. (1996) Immunization with high-molecular-weight adhesion proteins of nontypeable <i>Haemophilus influenzae</i> modifies experimental otitis media in chinchillas. Infect. Immun. 64: 1246-1251
KSS	8	Bhushan, R., et al. (1994) Molecular cloning and characterization of outer membrane protein E of <i>Moraxella (Branhamella) catarrhalis</i> . J. Bacteriol. 176: 6636-6643
KSS	9	Blueston, C.D. (1986) Otitis media and sinusitis in children. Role of <i>Branhamella catarrhalis</i> . Drugs 31 (Suppl. 3): 132-141

EXAMINER

DATE CONSIDERED

7/28/01

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KSS	10	Boyle, F.M., et al., (1991) <i>Branhamella</i> (Moraxella) catarrhalis: pathogenic significance in respiratory infections. Med. J. Aust. 154:592-596
KSS	11	Campagnari, A., et al., (1994) Growth of <i>Moraxella catarrhalis</i> with human transferrin and lactoferrin: expression of iron-repressible proteins without siderophore production. Infect. Immun. 62:4909-4914
KSS	12	Catlin, B.W. (1990) <i>Branhamella catarrhalis</i> : an organism gaining respect as a pathogen. Clin. Microbiol. Rev. 3:293-320
KSS	13	Chapman, A.J., Jr., et al. (1985) Development of bactericidal antibody during <i>Branhamella catarrhalis</i> infection. J. Infect. Dis. 151:878-882
KSS	14	Chen, D., et al., (1996) Evaluation of purified UspA from <i>Moraxella catarrhalis</i> as a vaccine in a murine model after active immunization. Infect. Immun. 64:1900-1905.
KSS	15	Christensen, J.J., et al., (1996) Serum antibody response to outer membrane proteins of <i>Moraxella</i> ( <i>Branhamella</i> ) <i>catarrhalis</i> in patients with bronchopulmonary infection. Clin. diagn. Lab. Immunol. 3:717-721
KSS	16	Cohen, D., et al. (1997) Double-blind vaccine-controlled randomised efficacy trial of an investigational <i>Shigella sonnei</i> conjugate vaccine in young adults. Lancet 340:155-159
KSS	17	Doern, G.V. (1986) <i>Branhamella catarrhalis</i> - an emerging human pathogen. Diagn. Microbiol. Infect. Dis. 4: 191-201
KSS	18	Doyle, W.J. (1989) Animal models of otitis media: other pathogens. Pediatr. Infect. Dis J. 8:Suppl. 45-47
KSS	19	Edebrink, P., et al. (1994) Structural studies of the O-polysaccharide from the lipopolysaccharide of <i>Moraxella</i> ( <i>Branhamella</i> ) <i>catarrhalis</i> serotype A (strain ATCC 25238). Carbohydr. Res. 257:269-284
KSS	20	Edebrink, P., et al. (1995) Structural studies of the O-antigen oligosaccharides from two strains of <i>Moraxella catarrhalis</i> serotype C. Carbohydr. Res. 266:237-261
KSS	21	Edebrink, P., et al. (1996) The structures of oligosaccharides isolated from the lipopolysaccharide of <i>Moraxella catarrhalis</i> serotype B, strain CCUG 3292. Carbohydr. Res. 295: 127-146
KSS	22	Ejlersten, T., et al. (1994) <i>Branhamella catarrhalis</i> in children and adults. A study of prevalence, time of colonisation, and association with upper and lower respiratory tract infections. J. Infect. 29:23-31
KSS	23	Eliasson, I. (1986) Serological identification of <i>Branhamella catarrhalis</i> . Serological evidence for infection. Drugs 31(Suppl. 3):7-10
KSS	24	Enright, M.C., et al. (1997) <i>Moraxella</i> ( <i>Branhamella</i> ) <i>catarrhalis</i> -clinical and molecular aspects of a rediscovered pathogen. J. Med. Micro-biol. 46:360-371.
KSS	25	Faden, H., et al. (1994) Epidemiology of <i>Moraxella catarrhalis</i> in children during the first 2 years of life: relationship to otitis media. J. Infect. Dis. 169:1312-1317
KSS	26	Fomsgaard, J. S., et al. (1991) Comparative immunochemistry of lipopolysaccharides from <i>Branhamella catarrhalis</i> strains. Infect. Immun. 59:3346-3349
KSS	27	Fung, C.P., et al. (1992) The antimicrobial susceptibility of <i>Moraxella catarrhalis</i> isolated in England and Scotland in 1991. J. Antimicrob. Chemother. 30:47-55
KSS	28	Goldblatt, D., et al. (1990) <i>Branhamella catarrhalis</i> : antigenic determinants and the development of the IgG subclass response in childhood. J. Infect. Dis. 162:1128-1135
KSS	29	Green, B.A., et al. (1994) Nontype <i>Haemophilus influenzae</i> Lipo-oligosaccharide Conjugates as Vaccine Candidates against NTHi, p. 125-129. In E. Norby, F. Brown, R.M. Chanock, and H.S. Ginsberg (ed), Vaccines 94. Cold Spring Harbor Laboratory Press, Plainview, N.Y.
KSS	30	Gu, X.-X., et al. (1997) Detoxified lipooligosaccharide from nontypeable <i>Haemophilus influenzae</i> conjugated to proteins confers protection against otitis media in chinchillas. Infect. Immun. 65:4488-4493
KSS	31	Gu, X.-X., et al. (1993) Preparation, characterization, and immunogenicity of meningococcal lipooligosaccharide-derived oligosaccharide-protein conjugates. Infect. Immun. 61:1873-1880
KSS	32	Gu, X.-X., et al. (1998) Synthesis and Characterization of Lipooligosaccharide-Based Conjugates as Vaccine Candidates for <i>Moraxella</i> ( <i>Branhamella</i> ) <i>catarrhalis</i> . Infect. Immun. 66:1891-1897
KSS	33	Gu, X.-X., et al. (1995) Quantitation and biological properties of released and cell-bound lipooligosaccharides from nontypeable <i>Haemophilus influenzae</i> . Infect. Immun. 63:4115-4120.
KSS	34	Gu, X.-X., et al. (1996) Synthesis, characterization, and immunological properties of detoxified lipooligosaccharide from nontypeable <i>Haemophilus influenzae</i> conjugated to proteins. Infect. Immun. 64:4047-4053.
KSS	35	Gupta, R.K., et al. (1992) Synthesis, characterization, and immunological properties of conjugates composed of the detoxified lipopolysaccharide of <i>Vibrio cholerae</i> O1 serotype Inaba bound to cholera toxin. Infect. Immun. 60:3201-3208

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	Helminen, M.E., et al. (1993) A major outer membrane protein of <i>Moraxella catarrhalis</i> is a target for antibodies that enhance pulmonary clearance of the pathogen in an animal model. <i>Infect. Immun.</i> 61:2003-2010
KSS	37 Helminen, M.E., et al. (1994) A large, antigenically conserved protein on the surface of <i>Moraxella catarrhalis</i> is a target for protective antibodies. <i>J. Infect. Dis.</i> 170:867-872
KSS	38 Hochstein, H.D., et al. (1973) Further developments of Limulus amebocyte lysate test. <i>Bull. Paraenter. Drug Assoc.</i> 27:139-148
KSS	39 Hu, W.-G., et al. (2000) Enhancement of Clearance of Bacteria from Murine Lungs by Immunization with Detoxified Lipooligosaccharide from <i>Moraxella catarrhalis</i> Conjugated to Proteins. <i>Infect. Immun.</i> 68:4980-4985
KSS	40 Jennings, H.J., et al. (1984) Conjugation of meningococcal Lipopolysaccharide R-type oligosaccharides to tetanus toxoid as route to a potential vaccine against group B <i>Neisseria meningitidis</i> . <i>Infect. Immun.</i> 43:407-412
KSS	41 Kelly, J., et al. (1996) Separation and Characterization of O-Deacylated Lipooligosaccharides and Glycans Derived from <i>Moraxella catarrhalis</i> Using Capillary Electrophoresis-electrospray Mass Spectrometry and Tandem Mass Spectrometry. <i>Analy. Biochem.</i> 233:15-30
KSS	42 Kemp, H.A., et al. (1986) Studies on the detrimental effects of bivalent binding in a microtiter plate ELISA and possible remedies. <i>J. Immunol. Methods</i> 94:65-72
KSS	43 Marrs, C.F., et al. (1990) Pili (fimbriae) of <i>Branhamella</i> species. <i>Am.J.Med.</i> 88(Suppl. 5A):36S-40S
KSS	44 Masoud, H., et al. (1994) Structural elucidation of the backbone oligosaccharide for the lipopolysaccharide of <i>Moraxella catarrhalis</i> serotype A. <i>Can. J. Chem.</i> 72:1466-1477
KSS	45 Masoud, H., et al. (1994) Characterization of the lipopolysaccharide of <i>Moraxella catarrhalis</i> . Structural analysis of the lipid A from M. catarrhalis serotype A lipopolysaccharide. <i>Eur.J. Biochem.</i> 220:209-216
KSS	46 McLeod, D.T., et al., (1986) Increase in bronchopulmonary infection due to <i>Branhamella catarrhalis</i> . <i>Br. Med. J.</i> 292:1103-1105
KSS	47 Murphy, T.F. (1996) <i>Branhamella catarrhalis</i> : epidemiology, surface antigenic structure, and immune response. <i>Microbiol. Rev.</i> 60:267-279
KSS	48 Murphy, T.F., et al. (1993) The major heat-modifiable outer membrane protein CD is highly conserved among strains of <i>Branhamella catarrhalis</i> . <i>Mol. Microbiol.</i> 10:87-97
KSS	49 Nicotra, B., et al. (1986) <i>Branhamella catarrhalis</i> as a lower respiratory tract pathogen in patients with chronic lung disease. <i>Arch. Intern. Med.</i> 146:890-893
KSS	50 Rahman, M., et al. (1995) Lack of serotype-specific antibody response to lipopolysaccharide antigens of <i>Moraxella catarrhalis</i> during lower respiratory tract infection. <i>Eur. J. Clin. Microbiol. Infect. Dis.</i> 14:297-304
KSS	51 Rahman, M., et al. (1997) Human immunoglobulin isotype and IgG subclass response to different antigens of <i>Moraxella catarrhalis</i> . <i>APMIS</i> 105:213-220
KSS	52 Robbins, J.B., et al. (1990) Polysaccharide-protein conjugates: a new generation of vaccines. <i>J.Infect. Dis.</i> 161:821-832
KSS	53 Robbins, J.B., et al. (1995) Perspective: hypothesis: serum IgG antibody is sufficient to confer protection against infectious diseases by inactivating the inoculum. <i>J.Infect. Dis.</i> 171:1387-1398
KSS	54 Sarubbi, F.A., et al. (1990) Respiratory infections caused by <i>Branhamella catarrhalis</i> . Selected epidemiologic features. <i>Am. J. Med.</i> 88 Suppl 5A:9S-14S
KSS	55 Smith, P.K., et al. (1985) Measurement of protein using bicinchoninic acid. <i>Anal. Biochem.</i> 150:76-85
KSS	56 Svenson, S.B., et al. (1981) Artificial <i>Salmonella</i> vaccines: <i>Salmonella typhimurium</i> O-antigen-specific oligosaccharide-protein conjugates elicit protective antibodies in rabbits and mice. <i>Infect.Immun.</i> 32:490-496
KSS	57 Tsai, C.M., et al. (1982) A sensitive silver stain for detecting lipopolysaccharides in polyacrylamide gels. <i>Anal Biochem.</i> 119:155-119
KSS	58 Vaneechoutee, M., et al. (1990) Respiratory tract carrier rates of <i>Moraxella (Branhamella) catarrhalis</i> in adults and children and interpretation of the isolation of M. catarrhalis from sputum. <i>J. Clin. Microbiol.</i> 28:2674-2680
KSS	59 Vaneechoutee, M., et al. (1990) Serological Typing of <i>Branhamella catarrhalis</i> strains on the basis of lipopolysaccharide antigens. <i>J. Clin. Microbiol.</i> 28:182-187
KSS	60 Verheul, A.F.M., et al. (1991) Preparation, characterization, and immunogenicity of meningococcal immunotype L2 and L3,7,9, phosphoethanolamide group-containing oligosaccharide-protein conjugates. <i>Infect.Immun.</i> 59:843-851
KSS	61 Wagner, D.K., et al. (1987) Analysis of immunoglobulin G antibody responses after administration of live and inactively influenza A vaccine indicates that nasal wash immunoglobulin G is a transudate from serum. <i>J. Clin. Microbiol.</i> 25:559-562
KSS	62 W.H.O. Expert Committee on Biological Standardization (1991) Requirements for <i>Haemophilus</i> type b conjugate vaccines. <i>WHO Tech. Rep. Ser.</i> 814:15-37

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63		Lang, Y.P., et al. (1997) The major outer membrane protein, CD, extracted from <i>Moraxella (Branhamella) catarrhalis</i> is a potential vaccine antigen that induces bactericidal antibodies. FEMS Immunol. Med. Microbiol. 17:187-199					
64		Zollinger, W.D., et al. (1983) Importance of complement source in bactericidal activity of human and murine monoclonal antibody to meningococcal group B polysaccharide. Infect. Immun. 40:257-264					

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